UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,432	07/02/2003	Don C. Rockey	1579-836	8031

23117 7590 10/31/2006

NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER	
WHITEMAN, BRIAN A	

ART UNIT	PAPER NUMBER
1635	

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/611,432	ROCKEY, DON C.	
	Examiner	Art Unit	
	Brian Whiteman	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *7/18/06,6/28/06*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/28/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1 and 3-7 are pending.

Applicant's traversal, the amendment to the specification, the cancellation of claim 2 and the amendment of claims 1 and 7 filed on 6/28/06 is acknowledged and considered by the examiner.

Election/Restrictions

Retroviral and adeno-associated virus in claim 5 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/14/05.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1 remains and claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fevery et al., (Digestion, Vol. 59, pp. 58-59, 1998) taken with Channon et al (Cardiovascular Research, Vol. 32, pp. 962-972, 1996). Fevery teaches a method of gene therapy for reducing portal hypertension comprising administering via portal vein an adenovirus vector comprising the gene encoding calcium-dependent constitutional enzyme (type III, ceNOS) to CCL4 cirrhotic rats (page 59). However, Fevery does not specifically teach using nNOS in the gene therapy method.

However, at the time the invention was made, Channon teaches the production of an adenoviral vector comprising a nucleic acid sequence encoding the neuronal isoform of NOS (abstract) for use in transfected human vascular cells.

It would have been *prima facie* obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Fevery taken with Channon, namely to produce an adenoviral vector comprising a nucleic acid sequence encoding a neuronal NOS polypeptide and delivering the vector to a mammal for reducing portal hypertension in the mammal. It would have been, a matter of designer's choice, obvious to one of ordinary skill in the art to use any NOS polypeptide (See Dillon, 919 F.2d at 693, 696,16 USPQ2d at 1901, 1904. See also Deuel, 51 F.3d at 1558, 34 USPQ2d at 1214) because, evidence to the contrary of an unexpected property of using neuronal NOS, any nucleic acid encoding an isoform of NOS could be used for expressing NO in the liver at a level that a reduction in portal hypertension would be observed in said mammal, in particularly in view of the results displayed by Fevery (See In re Payne, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). In addition, using the adenoviral

vector produced by Channon would save time in producing a viral vector comprising a nucleic acid sequence encoding the neuronal NO polypeptide because the vector was already produced and tested.

Therefore the invention as a whole would have been *prima facie* obvious to one ordinary skill in the art at the time the invention was made.

Applicant's arguments filed 6/28/06 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that the examiner provides no explanation as to where in the citations motivation can be found for making the combination, the argument is not found persuasive because there is a reasonable expectation that nNOS and ceNOS would have a similar property (express NO in the liver).

In response to applicant's argument that the examiner is urged to reconsider the rejection, particularly in view of the advantages of nNOS in ameliorating portal hypertension shown in the publication of Yu, the argument is not found persuasive because there is reasonable expectation that expression of either ceNOS or nNOS in the liver results in the production of NO in the liver. Thus, one of ordinary skill in the art would reasonably expect expression of either to treat portal hypertension. In addition, mere recognition of latent properties in the prior art (nNOS does not

require post-transcriptional modification in the liver) does not render non-obvious an otherwise known invention. In re Wiseman, 596 F.2d 1019, 201 USPQ 658 (CCPA 1979).

Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fevery taken with Channon as applied to claims 1 and 3-6 above, and further in view of Freidman et al (Nutr. Clin. Pract. Vol. 9, pages 69-72, 1994).

However, Fevery taken with Channon do not specifically teach delivering an adenoviral vector via the femoral vein to a mammal for reducing portal hypertension.

However, at the time the invention was made, Friedman teaches that femoral venous catheters (FVCs) is a safe and effective alternative to other forms of central venous access for delivering a substance to a mammal.

It would have been *prima facie* obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Fevery taken with Channon in further view of Friedman to use the femoral vein to deliver the recombinant viral vector to the mammal's liver for a method of reducing portal hypertension. One of ordinary skill in the art would have been would have been motivated to use the femoral vein to deliver the vector because the route of delivery was well known in the art for delivering a therapeutic substance to a mammal.

Therefore the invention as a whole would have been *prima facie* obvious to one ordinary skill in the art at the time the invention was made.

Applicant's arguments, see page 11, filed 6/28/06 with respect to the rejection(s) of claim(s) 1 and 7 under 103(a) as being unpatentable over Fevery taken with Freidman have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However,

upon further consideration, a new ground(s) of rejection is made in view of Fevery taken with Channon.

Response to Arguments

Applicant's arguments, see page 9, filed 6/28/06, with respect to 112 first paragraph written description have been fully considered and are persuasive. The rejection of claims 1 and 3-7 has been withdrawn because of the amendment to claim 1.

Applicant's arguments, see page 9, filed 6/28/06, with respect to 112 first paragraph enablement have been fully considered and are persuasive. The rejection of claims 1-6 has been withdrawn because of the amendment to claim 1.

Applicant's arguments, see page 9, filed 6/28/06, with respect to 102(b) have been fully considered and are persuasive. The rejection of claims 1 and 3-6 has been withdrawn because of the amendment to claim 1.

The Declaration under 37 CFR 1.132 filed 7/18/06 is sufficient to overcome the rejection of claims 1-7 based upon 102(a) as being anticipated by Yu et al. and 103(a) as being obvious over Fevery taken with Yu. The Declaration displays that concept of the instant invention was by Dr. Rockey only and not the other authors listed in the article.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Whiteman whose telephone number is (571) 272-0764. The examiner can normally be reached on Monday through Friday from 7:00 to 4:00 (Eastern Standard Time), with alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Paras, SPE – Art Unit 1635, can be reached at (571) 272-4517.

Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Fax Center number is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Brian Whiteman

BRIAN WHITEMAN
PRIMARY EXAMINER